

WHAT IS CLAIMED IS:

1. An optoelectronic transceiver comprising:
a data transmit line coupled to an optical source;
5 a data receive line coupled to an optical detector;
a serial communication bus distinct from the data transmit line and data receive
line;
a microprocessor coupled to the serial communication bus, the microprocessor
corresponding to a serial address;
10 an optical driver coupled to the optical source, the microprocessor providing a
control signal for adjusting a swing amplitude of the optical driver in accordance with one
or more commands received by the microprocessor via the serial communication bus.
2. The optoelectronic transceiver of claim 1, wherein the optical source is supplied
15 with a bias current, the microprocessor providing a control signal for adjusting the bias
current of the optical source in accordance with the one or more commands received by the
microprocessor via the serial communication bus.
3. The optoelectronic transceiver of claim 2, wherein the optical detector has an
20 electrical bandwidth, the microprocessor providing a control signal for adjusting the
electrical bandwidth of the optical detector in accordance with one or more commands
received by the microprocessor via the serial communication bus.
4. The optoelectronic transceiver of claim 3, wherein the optical detector has an
25 electrical bandwidth, and further comprising:
a plurality of filtering components, the microprocessor providing control signals to
the filtering components for coupling to the optical source or the optical detector in
accordance with one or more commands received by the microprocessor via the serial
communication bus.
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5. The optoelectronic transceiver of claim 2, wherein the optical detector has an
electrical bandwidth, and further comprising:
a plurality of filter components, the microprocessor providing control signals to the
filter components for coupling to the optical detector in accordance with one or more
35 commands received by the microprocessor via the serial communication bus.

6. The optoelectronic transceiver of claim 1, wherein the optical detector has an electrical bandwidth, the microprocessor providing a control signal for adjusting the electrical bandwidth of the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

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7. The optoelectronic transceiver of claim 6, wherein the optical detector has an electrical bandwidth, and further comprising:

a plurality of filter components, the microprocessor providing control signals to the filter components for coupling to the optical source or the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

8. The optoelectronic transceiver of claim 1, wherein the optical detector has an electrical bandwidth, and further comprising:
a plurality of filter components, the microprocessor providing control signals to the filter components for coupling to the optical source or the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

9. The optoelectronic transceiver of claim 1, wherein the serial communication bus is a two-wire bus.

10. The optoelectronic transceiver of claim 1, wherein the control signal is an output voltage from the microprocessor.

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11. The optoelectronic transceiver of claim 1, wherein the control signal is a voltage from a resistor network wherein the resistor network receives an output voltage from the microprocessor.

12. The optoelectronic transceiver of claim 11, wherein the resistor network includes a transistor.

13. The optoelectronic transceiver of claim 1, wherein the optical source is a laser diode.

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14. The optoelectronic transceiver of claim 1, wherein the optical driver is an integrated circuit.

15. An optoelectronic transceiver comprising:

- 5 a data transmit line coupled to an optical source;
a data receive line coupled to an optical detector;
a serial communication bus distinct from the data transmit line and data receive line;
a microprocessor coupled to the serial communication bus, the microprocessor
10 corresponding to a serial address;
the optical source supplied with a bias current, the microprocessor providing a control signal for adjusting the bias current of the optical source in accordance with one or more commands received by the microprocessor via the serial communication bus.

15 16. The optoelectronic transceiver of claim 15, wherein the optical detector has an electrical bandwidth, the microprocessor providing a control signal for adjusting the electrical bandwidth of the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

20 17. The optoelectronic transceiver of claim 16, wherein the optical detector has an electrical bandwidth, and further comprising:
a plurality of filter components, the microprocessor providing control signals to the filter components for coupling to the optical source or the optical detector in accordance with one or more commands received by the microprocessor via the serial communication
25 bus.

18. The optoelectronic transceiver of claim 15, wherein the optical detector has an electrical bandwidth, and further comprising:

a plurality of filter components, the microprocessor providing control signals to the
30 filter components for coupling to the optical source or the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

19. The optoelectronic transceiver of claim 15, wherein the serial communication bus is
35 a two-wire bus.

20. The optoelectronic transceiver of claim 15, wherein the control signal is an output voltage from the microprocessor.

21. The optoelectronic transceiver of claim 15, wherein the control signal is a voltage from a resistor network wherein the resistor network receives an output voltage from the microprocessor.

22. The optoelectronic transceiver of claim 21, wherein the resistor network includes a transistor.

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23. The optoelectronic transceiver of claim 15, wherein the optical source is a laser diode.

24. The optoelectronic transceiver of claim 15, wherein the optical driver is an integrated circuit.

25. An optoelectronic transceiver comprising:
a data transmit line coupled to an optical source;
a data receive line coupled to an optical detector;
a serial communication bus distinct from the data transmit line and data receive line;
a microprocessor coupled to the serial communication bus, the microprocessor corresponding to a serial address;
the optical detector has an electrical bandwidth, the microprocessor providing a control signal for adjusting the electrical bandwidth of the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

26. The optoelectronic transceiver of claim 25, wherein the optical detector has an electrical bandwidth, and further comprising:
a plurality of filter components, the microprocessor providing control signals to the filter components for coupling to the optical source or the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

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27. The optoelectronic transceiver of claim 25, wherein the serial communication bus is a two-wire bus.

28. The optoelectronic transceiver of claim 25, wherein the control signal is an output
5 voltage from the microprocessor.

29. The optoelectronic transceiver of claim 25, wherein the control signal is a voltage from a resistor network wherein the resistor network receives an output voltage from the microprocessor.

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30. The optoelectronic transceiver of claim 29, wherein the resistor network includes a transistor.

31. The optoelectronic transceiver of claim 25, wherein the optical detector is a pin
15 diode or Avalanche Photo Diode (APD).

32. The optoelectronic transceiver of claim 25, wherein the bias current is supplied by a transistor.

20 33. The optoelectronic transceiver of claim 32, wherein the transistor receives the control signal.

34. An optoelectronic transceiver comprising:
a data transmit line coupled to an optical source;
25 a data receive line coupled to an optical detector;
a serial communication bus distinct from the data transmit line and data receive line;
a microprocessor coupled to the serial communication bus, the microprocessor corresponding to a serial address;
30 the optical detector has an electrical bandwidth, and
a plurality of filter components, the microprocessor providing control signals to the filter components for coupling to the optical source or the optical detector in accordance with one or more commands received by the microprocessor via the serial communication bus.

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35. The optoelectronic transceiver of claim 34, wherein the serial communication bus is a two-wire bus.

36. The optoelectronic transceiver of claim 34, wherein the control signal is an output
5 voltage from the microprocessor.

37. The optoelectronic transceiver of claim 34, wherein the control signal is a voltage
from a resistor network wherein the resistor network receives an output voltage from the
microprocessor.

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38. The optoelectronic transceiver of claim 37, wherein the resistor network includes a
transistor.

39. The optoelectronic transceiver of claim 34, wherein the plurality of filter
15 components includes resistive and capacitive devices.

40. The optoelectronic transceiver of claim 34, wherein the plurality of filter
components includes transistors.

20 41. The optoelectronic transceiver of claim 40, wherein the transistors are field effect
transistors.

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